

### REMARKS

Applicants respectfully request reconsideration of the application, as amended, in view of the following remarks.

The present invention as set forth in **amended Claim 1** relates to a dried hydrogel, prepared by

polymerizing an olefinically unsaturated carboxylic acid or an olefinically unsaturated carboxylic acid compound in a polymerization reaction mixture;

**admixing the polymerization reaction mixture, before, during or after the polymerization and before drying, with an alkali metal silicate of the general formula I**



wherein M is an alkali metal and n is from 0.5 to 4;

thereby obtaining a hydrogel containing a polymer; and

drying said hydrogel at an elevated temperature, to obtain said dried hydrogel.

JP 06-016822 and WO 97/46189 fail to disclose or suggest to **admix the polymerization reaction mixture, before drying, with an alkali metal silicate of the general formula I.**

In the present invention, the polymerization reaction mixture, is admixed before drying, with an alkali metal silicate of the general formula I. That means that the polymeric networks in the hydrogel are expanded by the homogeneously absorbed high amount of water. An example of that expansion of hydrogel particles is shown in Ullmann's Encyclopedia of Industrial Chemistry, 6<sup>th</sup> ed., vol. 35, page 74, fig. 1 and F. L. Buchholz in Modern Superabsorbent Polymer Technology, page 7, fig. 1.3. Both articles are filed herewith together with an Information Disclosure Statement. As a result, the hydrogels of the present invention are different from and superior to

the materials of JP 06-016822 and WO 97/46189. In particular, the alkali metal silicate is **homogeneously distributed in the hydrogel**, which is necessary for neutralization of the acidic groups in the hydrogel. Due to the homogeneous distribution, the GLP gel permeability is high.

In contrast, JP 06-016822 discloses water-absorbent polymer particles that are prepared by admixing of absorbent resin particles with inorganic substances. The inorganic substances are homogeneously distributed **on the surface** of the absorbent resin particles (paragraph 23). In Example 1 of the reference, commercially available absorbent resin particles were used (paragraph 32). Such commercially available absorbent resin particles are dried because they are used to absorb water and therefore must be dry. The amount of water used in Example 1 is low (9.6g of water for 400g of absorbent resin particle). That means, the inorganic substances cannot diffuse into the resin particles. The water-absorbent polymer particles of JP 06-016822 are therefore different from the hydrogel of the present invention.

WO 97/46189 discloses absorbent articles that contain an absorbent gelling material and silica which is used as an odor control system. The odor control system may be incorporated into the absorbent article by layering on the core of the absorbent article or by mixing with the fibers of the absorbent core (page 8, paragraph 4). The odor control system can be fixed on fibers or absorbent gelling materials with thermoplastic material (page 8, paragraph 5). In the examples, commercially available dry materials were used. No water was added (page 13, paragraphs 2 to 5). However, WO 97/46189 fails to disclose or suggest to add the odor control system to a monomer solution or to a hydrogel **before drying**. Therefore, the hydrogel of the present invention is different from the material disclosed in WO 97/46189.

Therefore, the rejection of Claims 1 and 4-10 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Seikisui Plastics Co. LTD (JP 06-016822) and the rejection of Claims 1-9 under 35 U.S.C. § 103(a) as being unpatentable WO 97/46189 are believed to be unsustainable as the present invention is neither anticipated nor obvious and withdrawal of these rejections is respectfully requested.

The rejection of Claims 8 and 9 under 35 U.S.C. § 112, first paragraph, is moot in view of the cancellation of these claims.

The rejection of Claims 1-10 under 35 U.S.C. § 112, first paragraph, is obviated by the amendment of these claims.

The specification at page 3, lines 26-31, provides a sufficient number of examples for olefinically unsaturated carboxylic acid compounds. In addition, all that is required for the polymerization is the double bond and an acidic group. This is adequately described in the specification. Thus, a person of ordinary skill in the art can make and use the claimed invention without undue experimentation. Thus, the rejection should be withdrawn.

The rejection of Claims 11 and 12 is obviated by the amendment of these claims.

The rejection of Claims 2-10 under 35 U.S.C. § 112, second paragraph, is obviated by the amendment of these claims.

Further, the Examiner has rejected the claims because in his opinion “n” in Formula (I) of Claim 1 is indefinite when alkali metal hydroxide and/or alkali metal carbonate are added as claimed in Claims 4 and 5. He expects that the alkali metal hydroxide and/or the alkali metal carbonate would dissociate and form part of the  $M_2O$  denoted as part of the alkali metal silicate. However, Formula (I) in Claim 1 is

not indefinite as it properly describes the alkali metal silicate that is added to the polymerization mixture. The fact that other compounds are added does not change Formula (I).

The objection to the disclosure is obviated by the cancellation of Claims 8 and 9.

In regard to the Examiner's request to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made, Applicants are confirming that all claims were and are commonly owned.

Applicants respectfully request that the Examiner acknowledge that **all references** cited in the **Information Disclosure Statement**, filed in the above-identified application on **July 3, 2001**, have been considered. Specifically, the Examiner did not initial reference BU. For the Examiner's convenience a copy of **page 2 of 2 of Form PTO 1449 as filed on July 3, 2001**, is attached herewith. Another copy of the English abstract as filed previously is attached as well.


This application presents allowable subject matter, and the Examiner is kindly requested to pass it to issue. Should the Examiner have any questions regarding the claims or otherwise wish to discuss this case, he is kindly invited to contact Applicants' below-signed representative, who would be happy to provide any assistance deemed necessary in speeding this application to allowance.

Respectfully submitted,

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**BASIS FOR THE AMENDMENT**

Claims 8 and 9 have been canceled.

The claims have been amended to better conform to accepted U.S. claim format.

New Claims 13-17 have been added.

New Claim 13 is supported by Claim 1 as originally filed.

New Claim 14 is supported at page 3, lines 26-31 of the specification.

New Claim 15 is supported at page 2, lines 18 and 19 of the specification.

New Claims 16 and 17 are supported at page 2, lines 44 and 45 of the specification.

No new matter is believed to have been added by entry of this amendment.

Entry and favorable reconsideration are respectfully requested.

Upon entry of this amendment Claims 1-7 and 10-17 will now be active in this application.

### **INTERVIEW SUMMARY**

Applicants wish to thank Examiner Metzmaier for the helpful and courteous discussion with Applicants' Representative on October 5, 2004. The claims as amended were discussed. The Examiner indicated that the rejections of the claims as being indefinite appear to be overcome by the amendments. JP 06-016822 and WO 97/46189 fail to disclose or suggest to admix the polymerization reaction mixture, before drying, with an alkali metal silicate of the general formula I. As a result, the hydrogel of the present invention is different from and superior to the materials of the cited references.